## IN THE CLAIMS

Please amend the claims as follow:

Please cancel claims 22-23, 25, 33-34, 37, 39-41, 43-46, 49-50, 74, 80-83, 87-88, and 91-93.

1. - 19. (Canceled)

20. (Currently Amended) A component for use in a prosthetic joint, the component comprising:

a generally spherical substrate,

topographical features located on said substrate,

a diamond table sintered to said substrate in order to form a sintered polycrystalline diamond compact.

a load bearing and articulation surface on said polycrystalline diamond compact, said load bearing and articulation surface including polycrystalline diamond, said load bearing and articulation surface being formed to present a surface that accommodates joint articulation, and

further comprising a first uniform series of topographical ~~feature~~ features that ~~is a~~ are depressions formed ~~depression~~ to a first depth and a second uniform series of topographical ~~feature that is a depression~~ features that are depressions formed to a second depth, wherein said first depth is not equal to said second depth.

21. (Currently Amended) A joint component as recited in claim 20 wherein said substrate surface topographical features ~~tend to~~ provide a greater surface area of contact between said substrate and a diamond table than the surface area of contact would be without said topographical features.

22. - 23. (Canceled)

24. (Currently Amended) A joint component as recited in claim 20 wherein the substrate is metal, and further comprising a zone of composition gradient in which both diamond and substrate metal are found.

25. - 26. (Canceled)

27. (Previously Presented) A joint component as recited in claim 20 wherein said second depression is located in said first depression.

28. (Original) A joint component as recited in claim 27 wherein said first and second depressions have an outer periphery shape that is selected from the group consisting of round and polygonal.

29. (Original) A joint component as recited in claim 27 further comprising a third topographical feature that is a depression to at third depth, wherein said third depth is not equal to said second depth, and said third depth is not equal to said first depth.

30. (Original) A joint component as recited in claim 29 wherein at least one of said depressions has an outer periphery shape selected from the group consisting of round and polygonal.

31. (Original) A joint component as recited in claim 30 wherein said substrate includes CoCr as a solvent-catalyst metal.

32. (Original) A joint component as recited in claim 20 said substrate includes a metal selected from the group consisting of titanium, aluminum, vanadium, molybdenum, hafnium, nitinol, cobalt, chrome, molybdenum, tungsten, cemented tungsten carbide, cemented chrome carbide, fused silicon carbide, nickel, tantalum, and stainless steel.

33. - 34. (Canceled)

35. (Currently Amended) A component for use in a prosthetic joint, the component comprising:

a generally spherical polycrystalline diamond compact,

a diamond table on said polycrystalline diamond compact, said diamond table including polycrystalline diamond,

a substrate located on said polycrystalline diamond compact,

a first uniform series of topographical features formed on the substrate,

a second uniform series of topographical features formed on the substrate, the second uniform series of topographical features being different than the first uniform series of topographical features,

an interface between said substrate and said diamond table,

chemical bonds between said substrate and said diamond table, and

a load bearing and articulation surface located on said polycrystalline diamond compact, said load bearing and articulation surface being formed at least in part by polycrystalline

diamond of said diamond table, said load bearing and articulation surface being formed to present a surface that accommodates joint articulation.

36. (Original) A joint component as recited in claim 35 wherein said diamond table covers only a portion of the exterior surface of said substrate.

37. (canceled)

38. (Original) A joint component as recited in claim 35 wherein at least some topographical features are disposed inside of other topographical features ~~37 further comprising topographical features on said substrate beneath said diamond table~~.

39. - 46. (Canceled)

47. (Previously Presented) A joint component as recited in claim 35 further comprising a neck located on said polycrystalline diamond compact, said neck protruding from the generally spherical periphery of said polycrystalline diamond compact, and the neck serving as an attachment point for the joint component.

48. (Original) A joint component as recited in claim 47 wherein said diamond table covers substantially all of the joint component except the neck.

49. – 50. (Canceled)

51. (Currently Amended) A joint component as recited in claim 35 wherein at least some of said ~~substrate surface~~ topographical features are radiused in order to avoid generation of stress concentrations.

52. - 69. (Canceled)

70. (Currently Amended) A prosthetic joint comprising:

a substrate, the substrate comprising a first uniform series of substrate surface topographical ~~feature~~ features and a second uniform series of substrate surface topographical ~~feature~~ features which ~~is~~ are different than the first series of substrate surface topographical ~~feature~~ features,

a diamond layer sintered to said substrate,

interstitial spaces located in said diamond layer,

solvent-catalyst metal located in said interstitial spaces,

a zone that includes both sintered diamond and substrate, said zone having a composition gradient of solvent-catalyst metal content to diamond content, said gradient being selected from the group consisting of interface gradient, continuous gradient and incremental gradient,

chemical bonds in the component, said chemical bonds including diamond-to-diamond bonds in said diamond layer, diamond-to-metal bonds in said zone, and metal-to-metal bonds in said solvent-catalyst metal,

a mechanical grip between said diamond layer and said substrate which tends to secure said diamond layer to said substrate, and

a non-planar load bearing and articulation surface formed by said diamond layer.

71. (Previously Presented) A joint as recited in claim 70 further comprising a lip of substrate material which serves to hold said diamond layer in place adjacent said substrate.

72. (Previously Presented) A joint as recited in claim 70 further comprising a dovetailed interlock between said diamond table and said substrate.

73. (Previously Presented) A joint as recited in claim 70 further comprising a lip on said substrate that interlocks said substrate with said diamond table.

74. (Cancled)

75. (Previously Presented) A joint as recited in claim 70 wherein said diamond table includes a plurality of strata such that a first of said strata having characteristics which differ from those of a second strata.

76. (Previously Presented) A joint as recited in claim 75 wherein said differing characteristics are selected from the group consisting of diamond particle size, diamond particle distribution, and solvent-catalyst metal content.

77. (Previously Presented) A joint as recited in claim 70 wherein said diamond table is formed using CoCr as a solvent-catalyst metal.

78. (Previously Presented) A joint as recited in claim 70 further comprising a plurality of diamond strata in said zone.

79. (Previously Presented) A joint as recited in claim 70 wherein said diamond table presents a non-planar diamond load bearing and articulation surface.

80. – 83. (Canceled)

84. (Currently Amended) A joint as recited in claim 70, wherein the first series of substrate surface topographical ~~feature is a depression that extends~~ features are depressions that extend to a first depth and wherein the second series of substrate surface topographical ~~feature is a depression that extends~~ features are depressions that extend to a second depth different than the first depth.

85. (Currently Amended) A joint as recited in claim 70, wherein the second series of substrate surface topographical ~~feature is~~ features are depressions which are located within the first series of substrate surface topographical ~~feature~~ features.

86. (Currently Amended) A component for use in a prosthetic joint, the component comprising:

a polycrystalline diamond compact,

a diamond table on said polycrystalline diamond compact, said diamond table including polycrystalline diamond,

a substrate located on said polycrystalline diamond compact, the substrate having a first uniform series of topographical features and a second uniform series of topographical features which are different than the first uniform series of topographical features,

an interface between said substrate and said diamond table,

chemical bonds between said substrate and said diamond table, and

a load bearing and articulation surface located on said polycrystalline diamond compact, said load bearing and articulation surface being formed at least in part by polycrystalline diamond of said diamond table, said load bearing and articulation surface being formed to present a surface that accommodates joint articulation.

87. – 88. (Canceled)

89. (Currently Amended) A joint component according to claim 88, wherein ~~said substrate surface topographical features comprise a first substrate surface topographical feature and a~~ second series of substrate surface topographical ~~feature~~ comprises features located inside of ~~that is different than~~ the first series of substrate surface topographical ~~feature~~ features.

90. (Currently Amended) A joint component according to claim 89, wherein the first series of substrate surface topographical ~~feature is a depression~~ features are depressions extending to a first depth and the second series of substrate surface topographical ~~feature is a depression~~ features are depressions extending to a second depth that is different than the first depth.

91. – 93. (Canceled)

94. (Previously Presented) A joint as recited in claim 88, wherein at least some of said substrate surface topographical features are radiused.